

DOE Response to NAS-NRC Report Review of DOE's Nuclear Energy Research & Development Program

Today a committee of the National Research Council ("committee") released a report that the Department of Energy ("DOE") requested to inform budgetary and research development in its Office of Nuclear Energy ("NE"). DOE agrees with much of the report, and is pleased to note that the majority of the committee's recommendations are already embodied in DOE's budget and nuclear research priorities. However, we also feel that many of the committee's findings and recommendations are colored by faulty presumptions, especially in relation to the Global Nuclear Energy Partnership (GNEP).

NP 2010

DOE strongly agrees with the recommendation that NE, "should make the successful completion of the Nuclear Power 2010 program (NP 2010) its highest priority." This vital program, designed to support the near-term deployment of new nuclear plants, is NE's highest priority and the nearly \$200 million that DOE has contributed to this 50-50 cost shared program with industry has contributed to 18 commercial entities announcing plans to submit license applications to the Nuclear Regulatory Commission to construct 32 new nuclear plants. DOE also strongly agrees with the committee's charge that, "NP 2010...should be fully funded as a matter of highest priority."

Generation IV & Nuclear Hydrogen Initiative

DOE supports and agrees with the Committee's opinion that, "[t]he [Next Generation Nuclear Plant] program has well-established goals, decision points, and technical alternatives." This important contribution to the Generation IV International Forum will provide an advanced platform with tremendous industrial applications. Additionally, DOE agrees with the Committee's conclusion that the "[Nuclear Hydrogen Initiative] is well formulated to identify and develop workable technologies..."

Advanced Fuel Cycle Initiative & Global Nuclear Energy Partnership

As an initial matter, the Committee refers to the Advanced Fuel Cycle Initiative (AFCI) and Global Nuclear Energy Partnership (GNEP) interchangeably. As the Chairman of the Committee has noted directly to DOE, the focus of the Committee's analysis is solely directed at AFCI, which is only one facet of GNEP - a multi-office, multi-agency program as well as an international partnership consisting of 16 diverse countries all with the common goal of expanding nuclear power around the world safely and securely.

The Committee recommends that DOE continue to pursue research with the goal of developing advanced technologies to close the nuclear fuel cycle in the United States to extend resources, and to reduce quantities of waste as well as the difficulties disposing of it. We appreciate the Committee's support of the goal of closing the fuel cycle, and we would specifically note that the Committee rejected a minority opinion to the contrary. However, DOE strongly disagrees with the lack of urgency the Committee shows for closing the fuel cycle. With large expected increases in the demand for electricity as well as serious concerns about climate change, a substantial increase in nuclear capacity is required worldwide. This creates a serious urgency to

definitively develop an answer to the “waste question” that is credible and durable, that provides the opportunity for alternative waste disposition paths while also minimizing the requirement for geologic repositories, and makes the most efficient use of nuclear resources.

The committee finding that “the GNEP (sic) program should not go forward” is premised on a faulty assumption that DOE intends to facilitate premature commercial deployment of technologies that have not been demonstrated beyond laboratory-scale. That is not the intent of the program, as documented in the GNEP Strategic Plan (January 2007) provided to the committee. The Committee’s recommendation reflects an inaccurate understanding of the AFCI program, and is primarily based on out of date information and ignores documents that provide a more up-to-date view of this program. Initial feedback from industry and international partners led the Department to conclude that a commercial scale spent fuel recycling center project should be led by industry, incorporating the best technologies that are available today. The size of the facility and technology decisions would be based on economic and technical analysis by industry, with the Department and its national laboratory and university assets available to conduct research and technology development to permit incremental improvements to meet program long term objectives as they are developed. The only requirement from the Department, beyond following environmental, security, and safety regulations, was adherence to the policy of production of no separated pure plutonium.

After reviewing responses to a May 2007 Funding Opportunity Announcement made by the Department, four industry teams were awarded grants in September 2007 to produce conceptual design studies for a spent fuel recycling center and an advanced burner reactor, a technology development roadmap to support building the facilities and improving their capabilities over time to meet the GNEP goals, a business case for the facilities, and a communications plan. Initial inputs from the industry teams will be received in January 2008 and will be used to inform the Department’s R & D program.

Although the analysis in the report was based on outdated, early-program information, the recommendations developed by the committee mirror many of the conclusions developed and incorporated in the program by the Department. Of some significance is the fact that in the even though the Committee, disagreed with the specific details and timescale, it ultimately agreed that closing the fuel cycle in the U.S. is a desirable outcome.

Idaho National Laboratory

DOE strongly agrees with the Committees’ position that, “[the Idaho National Laboratory] is an important facility and provides important capabilities to support NE’s mission.” Moreover, DOE agrees with the Committee’s recommendation that INL’s facilities be marketed as “magnet facilities” to attract researchers and industrial users much like has been done at Office of Science National Laboratories. In fact, the Committee failed to note that in April 2007, the DOE designated the Advanced Test Reactor as a National Scientific User Facility to enhance U.S. leadership in nuclear science and technology.